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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,980	04/20/2001	Werner Jacob	INA-PT049	3600

3624 7590 03/05/2003

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EXAMINER

ABDELNOUR, DENNIS J

ART UNIT	PAPER NUMBER
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3681

DATE MAILED: 03/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,980

Applicant(s)

JACOB ET AL.

Examiner

Dennis J. Abdelnour

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

The following action is in response to the amendment received February 12, 2003, Paper No. 13. The action is also in response to the request for reconsideration received January 7, 2003, Paper No. 12. Claims 1 and 6 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Griswold (USPN 2,135,477) in view of Hutzl (USPN 4,699,527).

Griswold discloses a differential for a motor vehicle. The differential bevel-pinion shaft 24 is supported in a drive housing 11 by two spaced and axially pretensioned angular contact ball bearings as best seen in Figure 2 (see line 13 with reference to a bearing preload and spacer). The bevel pinion 25 and ring gear 21 drive the differential unit and output gears to rotate the wheel shafts of a motor vehicle. The unilaterally loadable tandem angular-contact ball bearings each include a one-piece inner bearing race and a one-piece outer bearing race and face each other in an O-arrangement. The first tandem angular contact ball bear 26 positioned next to the bevel pinion 25 of the bevel pinion shaft 24 is larger than the second bearing 27.

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The races of the bearings 26 and 27 are clearly shown in Figure 2 having a different diameter. The races of the bearings 26 and 27 are also shown in Figure 2 as having different pressure angles.

Griswold does not disclose the bearings as double row, nor does he disclose bearings 26 and 27 to include a cage.

Hutzel discloses a similar angular contact bearing assembly in Figure 10. The assembly is shown as double-row, unilaterally loadable angular-contact ball bearings set in a one-piece inner race 35 and one-piece outer race 36. Hutzel also shows a guided cage 6 which he notes acts to hold the ring of balls in a spaced relationship (col. 4, lines 19-20).

It would have been obvious to one having ordinary skill in the art at the time of the invention to replace the single-row angular-contact ball bearings on Griswold's differential input shaft with the double-row angular-contact ball bearings as taught by Hutzel in order to distribute the thrust load between the double row bearings.

It would have been obvious to one having ordinary skill in the art at the time of the invention to include a cage between the balls of the ball bearings on Griswold's bearing assembly as taught by Hutzel in order to hold the balls in a spaced relationship in the bearing.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Griswold in view of Hutzel as applied to claims 1-4 above, and further in view of Ebert (DE 35 22 600 A1).

Griswold in view of Hutzel has been previously described in the rejection of claims 1-4 and 6. Griswold further shows a deformable sleeve 33 acting to pretension the bearing assembly. Griswold in view of Hutzel does not disclose the deformable sleeve supporting the inner ring of the second ball bearing 26.

Ebert discloses in Figure 1 a similar differential assembly utilizing roller bearings. A deformable sleeve 9 is disposed between the two bearings on the bevel pinion shaft. The deformable sleeve 9 acts to pretension the bearings.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use a deformable sleeve disposed between the two bearings of Griswold in view of Hutzel as taught by Ebert in order to reduce the number of assembly parts to pretension the bearing.

Response to Arguments

4. Applicant's arguments filed January 7, 2003 have been fully considered but they are not persuasive.

The applicant's argument focuses on the high rims shown in the bearing assembly of the Hutzel reference which preclude the bearing from being used in a differential assembly. More particularly, the applicant asserts that the Hutzel bearing is not unilaterally loadable.

However, the bearing shown in Figure 10 of the Hutzel reference does not appear to function differently than the bearing assembly of the present invention. The axial pretension that the bearing would be subjected to as used in combination with the Griswold reference is the same as that of the present invention. The high rims in no way preclude such an arrangement. The Hutzel reference goes on to say "ball track 37 of race 36 is bounded by high rims 38 on both sides, while ball tracks 39 and 40 of inner race 35 have high rims 41 and 42 only at the sides subjected to the axial force." The bearing, therefore, can be subjected to an axial force in one direction, or is unilateral. The bearing is not provided for receiving an axial load in the opposite

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direction, just as the bearing assembly of the present invention is not provided for receiving an axial load in the opposite direction. For these reasons, it does not appear that the term "unilaterally loadable" distinguishes the present invention from the prior art as cited in the rejection above.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Facsimile Transmission

6. Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is (703) 305-3597. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mailroom processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those

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requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check **should not be** submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (703) 305-3597) on _____

(Date)

Typed or printed name of person signing this certificate:

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis J. Abdelnour whose telephone number is (703) 305-5309.

The examiner can normally be reached on Monday-Friday, 8:00-5:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (703) 308-0830. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3597 for regular communications and (703) 305-3597 for After Final communications.

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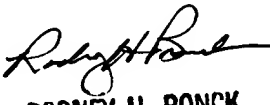
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.

dja


February 27, 2003


RODNEY H. BONCK
PRIMARY EXAMINER
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